NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

RIPARIAN HERBACEOUS COVER

(Ac.)

CODE 390

DEFINITION

Grasses, sedges, rushes, ferns, legumes, and forbs tolerant of intermittent flooding or saturated soils, established or managed as the dominant vegetation in the transitional zone between upland and aquatic habitats.

PURPOSE

Apply this practice as part of a conservation management system to accomplish one or more of the following purposes:

- Provide or improve food and cover for fish, wildlife, and livestock.
- Improve and maintain water quality.
- Establish and maintain habitat corridors.
- Increase water storage on floodplains.
- Reduce erosion and improve stability to streambanks and shorelines.
- Increase net carbon storage in the biomass and soil.
- Enhance pollen, nectar, and nesting habitat for pollinators.
- Restore, improve, or maintain the desired plant communities.
- Dissipate stream energy and trap sediment.
- Enhance streambank protection as part of streambank soil bioengineering practices.

CONDITIONS WHERE PRACTICE APPLIES

- Areas adjacent to perennial and intermittent watercourses or waterbodies where the natural plant community is dominated by herbaceous vegetation that is tolerant of periodic flooding or saturated soils. For seasonal or ephemeral watercourses and waterbodies, this zone extends to the center of the channel or basin.
- Where channel and streambank stability is adequate to support this practice.
- Where the riparian area has been altered and the potential natural plant community has changed.

CRITERIA

General Criteria Applicable to All Purposes

Where available, use Ecological Site Descriptions (ESDs) to guide restoration to appropriate vegetative community phase and include appropriate vegetative functional groups.

Select perennial plants that are adapted to site and hydrologic conditions and provide the structural and functional diversity preferred by fish and wildlife that are likely to benefit from the installation of the practice.

Use natural regeneration in lieu of planting in areas where native seeds and propagules are present. Planting is required if no native seed bank is present.

Protect riparian vegetation and water quality by reducing or excluding haying and grazing until the desired plant community is well established.

Consider stream type and site hydrology. Select plant species adapted to the projected duration of saturation and inundation of the site.

Control or eliminate harmful pests present on the site as necessary to achieve and maintain the intended purpose.

Conduct pest management in a manner that mitigates impacts to pollinators.

Design management systems to maintain or improve the vigor and reproduction of the desired plant community.

Prepare and plant sites at a time and manner to insure survival and growth of selected species. Use only viable, high quality, and site-adapted planting stock.

Determine the width of the riparian herbaceous cover planting based on the geomorphic potential of the site and project purposes, including the life history requirements of local fish and wildlife species, including pollinators.

Replace existing underground functional drains that pass through these areas with rigid, non-perforated pipe through the buffer or equip with a management regulating structure to allow control of overflow.

Defer domestic grazing for a minimum of two years or until such time as the desired plant community is established.

Additional Criteria to Maintain or Improve Water Quality and Quantity

Increase minimum width to 2 1/2 times the stream width (based on the horizontal distance between bank-full elevations) or 35 feet for waterbodies. Control concentrated flow erosion or mass soil movement in the up-gradient area prior to establishment of the riparian herbaceous cover.

Select species that have stiff stems and high stem density near the ground surface to reduce water velocities and facilitate infiltration into the floodplain.

Additional Criteria to Stabilize Streambanks and Shorelines

Select native or accepted, introduced species that provide a deep, binding root mass to strengthen streambanks and improve soil health.

Additional Criteria for Increasing Net Carbon Storage in Biomass and Soils

Maximize width and length of the herbaceous riparian cover to fit the site.

Use plant species with the highest rates of biomass production for the soil and other site conditions, consistent with meeting fish and wildlife habitat requirements.

Additional Criteria for Pollinator Habitat

Include forbs and legumes that provide pollen and nectar for native bees. Utilize a diverse mix of plant species that bloom at different times throughout the year.

Additional Criteria for Terrestrial Wildlife

Select native species adapted to the site.

Manage the density of the vegetative stand established for targeted wildlife habitat requirements and encourage plant diversity.

If mowing is necessary to maintain herbaceous cover, mow outside the nesting and fawning seasons and allow for adequate re-growth for winter cover. Limit site disturbance (mowing, grazing, burning, etc.,) to protect pollinators and maintain habitat with a diversity of plant structure, to a third or less of the site each year, allowing for recolonization of pollinators from surrounding habitat.

Consider habitat and wildlife objectives such as habitat diversity, habitat linkages, daily and seasonal habitat ranges, limiting factors, and native plant communities in the management plan.

Additional Criteria for Restoring Desired Plant Community

Use ESD state and transition models, where available, to determine if proposed actions are ecologically sound and defensible. Treatments need to be congruent with dynamics of the ecological site(s) and keyed to states and plant community phases that have the potential and capability to support the desired plant community. If an ESD is not available, base design criteria on best approximation of the desired plant community composition, structure, and function.

CONSIDERATIONS

Recommend native plant species, although introduced species may be used. Select species with multiple values such as those suited for biomass, wintering and nesting cover, aesthetics, forage value for aquatic invertebrates, and tolerance to locally used herbicides.

Facilitate the establishment of riparian herbaceous cover or enhance its performance with other conservation practices, such as:

- Stream Habitat Improvement and Management (395)
- Streambank and Shoreline Protection (580)
- Fence (382)
- Forage and Biomass Planting (512)
- Range Planting (550)
- Filter Strip (393)
- Access Control (472)
- Prescribed Grazing (528)
- Brush Management (314)
- Herbaceous Weed Control (315)
- Heavy Use Area Protection (561)
- Critical Area Planting (342)
- Riparian Forest Buffer (391)
- Early Successional Habitat Development/Management (647)
- Restoration and Management of Rare and Declining Habitat (643)
- Stream Crossing (578)
- Watering Facility (614)

Consider how this practice will complement the functions of adjacent riparian, terrestrial, and aquatic habitats.

Consider the effects of upstream and downstream conditions, structures, facilities, and constraints on the planned activities.

Control invasive trees and shrubs when needed to prevent dominance of the riparian zone by woody plants and maintain openness in the riparian system.

Establish alternative water sources or controlled access stream crossings to manage livestock access to the stream and riparian area.

Use herbaceous riparian areas to link pollinators with adjacent fragmented habitat and allow them to serve as a conduit to move pollinators into areas requiring insect pollination. Different flower sizes and shapes appeal to different categories of pollinators. Consider establishing the greatest diversity possible to support many species. Consider incorporating nesting habitat including patches of unshaded bare soil for ground-nesting bees, or where bumblebee conservation is a priority, clump forming warm-season native grasses.

Avoid plant species which may be alternate hosts to pests. Species diversity should be considered to avoid loss of function due to species-specific pests.

Complement natural features with location, layout and vegetative structure, and composition of the buffer.

Enhance habitats for threatened, endangered, and other plant or animal species of concern, where applicable, through corridor configuration, establishment procedures, and management.

Use plant species that provide full ground coverage to reduce particulate matter generation during establishment and maintenance operations.

PLANS AND SPECIFICATIONS

Prepare specifications for this practice for each site. Record using approved specifications sheets, job sheets, narrative statements in the conservation plan, or other acceptable documentation.

OPERATION AND MAINTENANCE

The purpose of operation, maintenance, and management is to insure that the practice functions as intended over time.

Inspect the riparian area periodically in order to detect adverse impacts and make adjustments in management to maintain the intended purpose.

Continue control of concentrated flow erosion or mass soil movement in the up-gradient area to maintain riparian function.

Do not compromise the intended purpose of this practice with the use of fertilizers, pesticides, and other chemicals. Control or eliminate as

necessary harmful pests present on the site to achieve and maintain the intended purpose.

Conduct pest management in a manner that mitigates impacts to pollinators.

Avoid haying or grazing when streambanks and riparian areas are vulnerable to livestock or mechanical damage.

Manage grazing to sustain riparian functions and values.

Design and apply management systems to maintain or improve the vigor and reproduction of the desired plant community, e.g., the riparian functions and values.

Where the primary purpose of the practice is to provide terrestrial wildlife habitat, manage the density of the vegetative stand for targeted wildlife habitat requirements and encourage plant diversity. If mowing is necessary to maintain herbaceous cover, mow outside the nesting and fawning seasons and allow for adequate re-growth for winter cover.

REFERENCES

FISRWG (Federal Interagency Stream Restoration Working Group). 1998. Stream Corridor Restoration: Principles, Processes and Practices. National Technical Information Service, U. S. Department of Commerce, Springfield, VA. Also published as NRCS, U.S. Department of Agriculture (1998) *Stream Corridor Restoration: Principles, Processes, and Practices*. National Engineering Handbook (NEH), Part 653. Washington, D.C.

Fripp, J. B.; Hoag, J.C, and Moody, T. 2008. Streambank Soil Bioengineering: A Proposed Refinement of the Definition Riparian/Wetland Project Information Series No. 23.

Hoag, J.C. and J.B. Fripp. 2002. Streambank Soil Bioengineering Field Guide for Low Precipitation Areas, Interagency Riparian/Wetland Project. Plant Materials Center, USDA-NRCS, Aberdeen, ID.

Hoag, J.C., S.K. Wyman, G. Bentrup, L. Holzworth, D.G. Ogle, J. Carleton, F. Berg, and B. Leinard. 2001. USDA-NRCS, Boise, ID and Bozeman, MT. Technical Note 38: Users Guide to the Description, Propagation, and Establishment of Wetland Plant Species and Grasses for Riparian Areas in the Intermountain West. (PDF; 6.3 MB)

Leopold, Luna.1994. A View of the River. Harvard University Press. Cambridge, MA.

Naiman, R.J., N. Decamps, M. E. McClain. 2005. Riparian Ecology, Conservation, and Management of Streamside Communities. Elsevier Academic Press, Burlington, MA.

Rosgen, David 1994. A Classification of Natural Rivers. Catena 22:169-199

Schultz, R.C., J.P. Colletti, T.M. Isenhart, W.W. Simpkings, C.W. Mize, and M. L. Thompson. 1995. Design and placement of a multi-species riparian buffer strip. Agroforestry Systems 29:201-225.ts.

United States Department of Agriculture, Natural Resources Conservation Service. 2008. General Manual: Title 190 – Ecological Sciences: Part 404 – Pest Management... Washington, D.C.

United States Department of Agriculture, Natural Resources Conservation Service. 2003. National Range and Pasture Handbook. Washington, D.C.

http://plants.usda.gov/pollinators/Using_Farm_Bill_Programs_for_Pollinator_Conservation.pdf

Agroforestry Notes on supporting pollinators (General 6, 7, 8 and 9):

http://www.unl.edu/nac/agroforestrynotes.htm